ABSTRACT

The present invention provides methods of converting or increasing conversion of a fatty acid to its corresponding dicarboxylic acid. The methods comprise isolating a promoter from a yeast gene which gene is induced when the yeast is grown on a fatty acid or alkane substrate, and operably linking the promoter to a gene involved in dicarboxylic acid production to form an expression vector. Yeast cells are subsequently transformed with such an expression vector and cultured in a media containing an organic substrate biooxidizable to a mono- or polycarboxylic acid, and resultant yeast cells convert or increase conversion of fatty acids to their corresponding dicarboxylic acids. Examples of promoters that may be used in the methods of the present invention include those from *C. tropicalis* catalase, citrate synthase, 3-ketoacyl-CoA thiolase A, citrate synthase, O-acetylhomserine sulphydrylase, protease, carnitine O-acetyltransferase, hydratase-dehydrogenase, and epimerase genes. A preferred promoter for use in a subject expression vector is the POX4 gene promoter. Examples of genes involved in dicarboxylic acid production include members of an ω-hydroxylase complex such as e.g., *CYP, NCP*, or *CYTb5* genes. Host cells comprising such expression vectors are also provided. Preferred host cells are include *Yarrowia, Candida, Bebaromyces*, *Saccharomyces, Schizosaccharomyces*, and *Pichia*.